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CHAPTER

14

INTERACTIONS IN ECOSYSTEMS

Vocabulary Practice

habitat	parasitism	population crash
ecological niche	population density	limiting factor
competitive exclusion	population dispersion	density-dependent limiting factor
ecological equivalent	survivorship curve	density-independent limiting factor
competition	immigration	succession
predation	emigration	primary succession
symbiosis	exponential growth	pioneer species
mutualism	logistic growth	secondary succession
commensalism	carrying capacity	

A. What's the Difference? For each pair of words below, describe the difference between the two terms.

1. primary succession/secondary succession

Secondary starts with soil already in tact.
Primary begins with just bare rock

2. ecological niche/habitat

habitat is where you live and what is around.
niche also includes your interaction/behavior.

3. logistic growth/exponential growth

logistic starts slow, increases, then levels out at carrying capacity. Exponential increases fast for a long time.

4. density-dependent limiting factor/density-independent limiting factor

dependent is only a factor if population density gets high. independent will affect things no matter what

5. mutualism/parasitism

mutualism benefits both members of the symbiotic relationship while parasitism is good for one and bad for the other.

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VOCABULARY PRACTICE, CONTINUED

B. Matching Write the vocabulary term next to its definition.

commensalism
competition

mutualism
parasitism

predation
symbiosis

Symbiosis

1. A close relationship between two or more individuals of different species that live in close contact with one another

Parasitism

2. Type of symbiosis in which one individual benefits while the other individual is harmed

Predation

3. Occurs when one organism captures and eats another organism

Mutualism

4. Type of symbiosis in which both individuals benefit

Competition

5. Occurs when two organisms fight for the same limited ~~organisms~~ resources

Commensalism

6. Type of symbiosis in which one individual benefits while the other individual neither benefits nor is harmed

carrying capacity
emigration

immigration
limiting factor

population crash

emigration

7. The movement of individuals *out* of a population into another population

Carrying Capacity

8. The maximum number of individuals of a certain species that an environment can normally support over a long period of time

Immigration

9. The movement of individuals *into* a population from another population

Pop. Crash

10. A dramatic decline in the size of a population over a short period of time

Limiting Factor

11. A factor that controls the size of a population

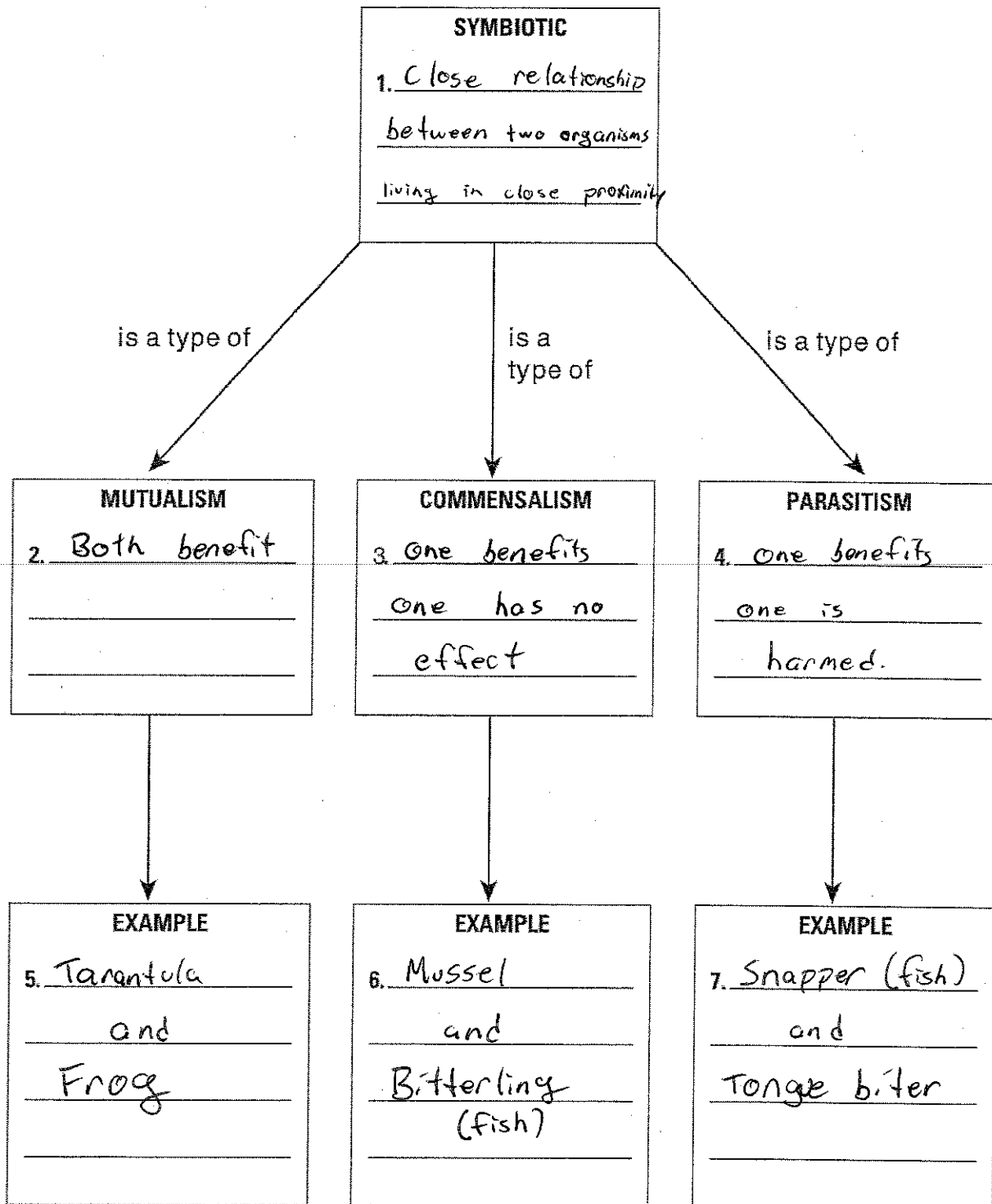
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VOCABULARY PRACTICE, CONTINUED

C. Vector Vocabulary Define the words in the boxes. On each arrow, write a phrase that describes how the words in the boxes are related to each other.



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VOCABULARY PRACTICE, CONTINUED

D. Secret Message Fill in the blanks with the vocabulary word that best fits. When complete, write the boxed letters in order in the blanks at the bottom of the page.

1. All of the abiotic and biotic factors in the area where a species lives

H A b i t a t

2. A factor that has the greatest effect in keeping down the size of a population

L i m i t i n g

3. The process by which one organism captures and feeds upon another organism

P r e D a t i o n

4. A type of species that is the first to live in a previously uninhabited area

P i O n e e r

5. A type of population growth in which a period of slow growth is followed by a short period of exponential growth before leveling off at a stable size

L o g i s t i c

6. Occurs when two individuals compete for the same resources

C o m p E t i t i o n

7. A close relationship between two or more different species that live in close contact with one another

S y m b i O s i s

8. A symbiotic relationship in which one organism is helped and the other is hurt

P a r a s i t i s m

9. The movement of individuals into a population from a different population

I m m i g r a t i O n

10. A symbiotic relationship in which both organisms benefit

M u t u a L i s m

11. A type of succession in which an ecosystem damaged by fire is reestablished

S e c o n D a r y

Fill in the blanks with the boxed letters from above to name the famous ecologist:

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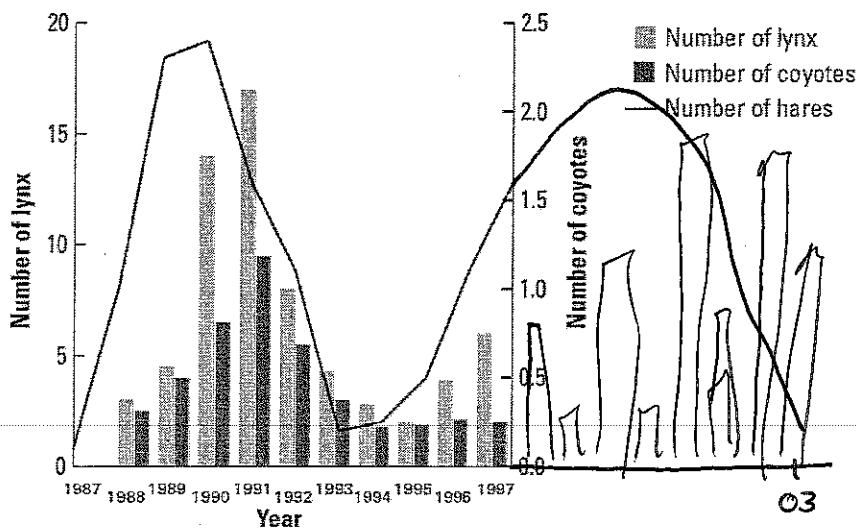
READING A COMBINATION GRAPH

Data Analysis Practice

Combination graphs show two or more sets of data on the same graph.

Scientists have been tracking the population numbers of snowshoe hares, lynx, and coyotes in northern Canada over many years. In this region, lynx and coyote are the primary predators of the snowshoe hare. The graph below shows the population numbers for all three animals over a ten-year period.

GRAPH 1. LYNX, COYOTE, AND HARE POPULATIONS



1. **Analyze** As the population of snowshoe hares increases, what happens to the coyote and lynx populations?

Shortly after the hare population increases the lynx and coyote population increases as well. This is b/c they have enough food.

2. **Identity** Scientists have observed that the population of hares follows a pattern that occurs in an eight-year cycle. Over this time period, the population peaks and then crashes. Predict how snowshoe hare, lynx, and coyote populations would change by extending the graph for the years 1998–2003.

Hare pop goes up. a short time later lynx and coyote go up. when lynx/coyote get big they eat hares and hare pop. goes down.

